

International Journal of Offender Therapy and Comparative Criminology

Whiter than white: The art of delaying detection in sexual killers.

Journal:	<i>International Journal of Offender Therapy and Comparative Criminology</i>
Manuscript ID	IJOTCC-18-0226
Manuscript Type:	Special Issue
Keywords:	sexual homicide, forensic awareness, police detection, avoiding arrest, typology
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For Peer Review

Abstract

The study investigated whether different types of sexual homicide perpetrators are more or less skilled at delaying detection. Using the newly proposed direct/indirect typology, the time of arrest, the frequency of specific precautions as well as the impact of forensic strategies used by the perpetrators were examined. The results indicated that the time from the killing to the arrest, as measured in days, was longer for the direct than the indirect sexual killers. Despite the fact that the direct aggressors were better at delaying detection, overall the indirect and the direct offenders did not differ in the frequency of use of most of the precautions. However, different forensic awareness strategies were more efficacious for the direct and the indirect offenders. These results are discussed in relation to the crime scripts for the two perpetrator groups.

Forensic evidence refers to information gathered by various forensic science disciplines that can serve as evidence in a criminal case. Such evidence has either class or individual characteristics. Class material shares properties with a group of items and therefore it narrows down the evidence to a group of people or things such as race of the perpetrator or a model of a firearm. Individual material shares properties with a single source and therefore it narrows down the evidence to an individual person or a thing (Kiely, 2001).

From the outset of the investigation, the aim for the investigative team is to make sense of the homicide incident. Drawing inferences from the material available the goal is to answer the questions as to what had happened and why. The Murder Investigation Manual suggests to organise such evidence by three core elements of a homicide: the location, the victim and the offender. Features associated with the location relate to various places of the homicide event such as the encounter between the victim and the offender, the location of the offence or the body deposition site. Features associated with the victim relate to victim activities and victim characteristics. Finally, offender features relate to the actions and the amount of evidence the perpetrator left or indeed took away from the crime scene to minimise the chances of being caught. These include but are not limited to the degree of crime scene arrangement or rearrangement; moving, arranging or hiding the body; steps taken to avoid themselves or the victim being recognised; ways of taking control over the victim; ways of acting on the location such as choosing the scene to minimise chances of being disturbed (National Centre for Policing Excellence, 2006).

No all types of physical evidence however are equally valuable (helpful) in terms of crime solvability. A body of research examining homicide clearance rates point to a range of characteristics that tend to make the case easier or harder to solve by the investigative team. For example, cases involving non-contact weapons (frequently firearms but also poison or

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3 drugs) have consistently been reported to be more difficult to solve in comparison to contact
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5 weapons such as knife, hands or a blunt object, possibly due to the potential presence of more
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7 physical evidence (Litwin, 2004; Mouzos & Muller, 2001; Litwin & Xu, 2007). Stranger
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9 homicides decrease the likelihood of being cleared as the case becomes weaker (Trussler,
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11 2010) while in known victim killings the relatives or close friends are able to provide more
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13 information (Lee, 2005; Riedel & Rinehart, 1996). Homicides committed at home or public
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15 areas tend to be positively associated with clearances as opposed to those carried out in alleys
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17 or abandoned buildings. This is because the former are regarded as high or medium visibility
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19 areas with more witness presence (Litwin & Xu, 2007). Additionally, homicides committed
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21 at home tend to involve domestic-related incidents (Beauregard & Martineau, 2017). The
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23 clearing rate of the homicide when the offender was under the influence of
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25 substances tends to be higher possibly as under such circumstances perpetrators are
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27 more apt to making mistakes during the commissioning of the crime. This includes
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29 choosing a location in view of more potential witnesses (Roberts, 2007) or leaving
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31 more physical evidence as a result of little/poor employment of forensic awareness
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33 strategies (Beauregard & Bouchard, 2010).
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43 The impact of the use of forensic awareness strategies (i.e. steps taken in a
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45 criminal event to hide evidence in order to avoid apprehension; Davies, 1992) on
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47 crime solvability have been investigated by Salfati and Haratsis (2001). Significant
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49 association was found between offenders who did or did not use various forensic
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51 awareness strategies and the solvability of homicides (with former being more
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53 prevalent in the unsolved cases and the latter in the solved cases). The use of arson
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55 to destroy evidence was an exception as it did not relate to the solved/unsolved case
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status. Beauregard and Martineau (2014) examined whether using forensic awareness strategies enabled offenders to either avoid detection or to delay apprehension (as measured by the number of days until body discovery). Surprisingly, (and contrary to their working hypotheses) the authors found that if the perpetrator used at least one precaution to avoid detection, the case was more likely to be solved. Moreover, precautions used by the perpetrator did not delay the discovery of the victim, and thus it did not delay the perpetrator’s apprehension. However, concealing the victim’s body did in fact delay the time of body recovery and as a consequence it delayed the perpetrator’s apprehension.

Using one of the first and most well-known examples of a classification system of sexual murder, the organised or disorganised classification (Ressler, Burgess & Douglas, 1988), Beauregard and Martineau (2017) expanded on the current understanding of different types of sexual murderers by examining if the behaviours associated with the organized offender were related to ability to delay or avoid police detection. Avoidance was measured by solved/unsolved case status whereas delay by a number of days until body recovery. The results suggested that some behaviours have a similar effect on both delaying and avoiding detection. For example, selection of a less risky location is likely to both delay and avoid detection whereas use of a weapon and anal intercourse increased the possibility of being detected. On the other hand, some behaviours whilst having a positive effect on delaying detection had a negative effect on avoiding detection and vice versa. Overall, of a total of 12 behaviours classed as organised, two were positively associated with the ability to avoid and four with the ability to delay detection. The authors theorised that this could be because organised behaviours identified by the FBI are not in fact associated with police avoidance. However, despite somewhat inconsistent results the overarching aim of the study resounds as

for the first time different types of sexual homicide perpetrators were scrutinised in relation to police avoidance.

The current research aims to combine the two approaches described above and examine 1) the use of specific forensic awareness strategies, in relation to 2) different types of sexual homicide perpetrators. We believe that accounting for the types of sexual killers is important as time and time again the research suggests that sexual homicide comprises of a diverse group of perpetrators. The offences should be understood as a hybrid between sexual assault and homicide (Beauregard & Martineau, 2017) with distinguishable different scenarios where some perpetrators kill for sexual reasons while others kill for more pragmatic reasons (Stefanska, Higgs, Carter, & Beech, 2017). As motivational aspect in sexual homicides is difficult to establish, it has been suggested that different types of perpetrators ought to be identified based on their actions at the crime scene rather than the motivational component (Beauregard & Martineau, 2017). A new classification system proposed by Stefanska et al. (2017) allows examining the behaviours within the criminal event in order to classify perpetrators depending on the relationship between the sexual element and the act of killing within the criminal event of the homicide. As such, Stefanska et al (2017) proposed the direct/indirect typology. In the direct type, the sexual element and the act of killing are clearly integral, and thus the killing at some point (either pre or post) provided a source of sexual stimulation. In the indirect type, although the offence occurs in the sexual context the killing was not a source for sexual arousal and the sexual aspect within the sexual assault and homicide hybrid clearly happened before the killing took place. The study also aims to improve on the measurement of the perpetrators ability to delay detection by accounting for the days it took from the killing to arrest, rather than killing to finding the victim's body. However, as the study relies on the prison population, it is not able to investigate the ability to avoid detection (as measured by solved/unsolved case status).

Using the proposed the direct/indirect typology (Stefanska et al., 2017) the study examined whether direct and indirect sexual killers differ in their ability to delay detection and what specific precautions they use during the criminal event.

Methodology

Sample

The sample comprised of 350 perpetrators who served a custodial sentence for murder or manslaughter within HM Prison Service in England and Wales of female victims aged 14 years or above. All of the offenders were male and the sample included only non-serial cases i.e. one or two victims without an emotional cool-off period (i.e. two victims killed at the same time or within a period indicative of a single event) were killed (Proulx, Cusson & Beauregard, 2007). The criteria for sexual homicide included offenses where a sexual element and/or a sexual motivation for the murder was evidenced, suspected or admitted, which was in line with the UK National Offender Management Service OASys research database. However, out of this sample, cases where the perpetrator turned himself in almost immediately after the murder (n= 49) as well as outlier cases i.e. cold cases where the perpetrators were found more than 20 years later due to advancements in DNA testing (n=10) were excluded. This left the final sample comprising of 291 cases.

Procedure and measures

Information was gathered from the electronic or physical lifer files (containing the details of the crime event) in the Public Protection Unit Database. In order to establish inter-rater reliability, ten percent of the same cases were blind-coded by two raters, and the strength of agreement was excellent (Fleiss criteria, 1981) (Cohen’s Kappa = .91).

Delaying detection was measured by the time (counted in days) it took from the murder to arrest. Eight forensic awareness strategies used by the perpetrator to delay detection were examined in the current study: (1) protecting own identity - included behaviours such as wearing a mask, giving false name, disguising or altering appearance or changing residence after the crime; (2) acting on victim - included tying, gagging or blindfolding the victim or administering drugs; (3) acting on the environment – disabling lights or telephones, any security systems, obscuring access of the doors or windows; (4) removing evidence – included cleaning, disposing of the weapon used or the perpetrators clothes worn during the commissioning of the crime; (5) setting fire to the scene; (6) disposing of victim's body; (7) giving false statements; (8) arranging alibi. All of the precautions were binary, coded as either absent or present (0 = no, 1 = yes).

The study sought to examine whether direct and indirect sexual killers differed in their ability to avoid detection in relation to the specific precautions they used during the criminal event. Thus, as a next step, each case was assigned as belonging to either the direct or the indirect group and this decision was based on the evidence accepted by the court at trial. The assignment process was based on the definitions provided by Carter and Hollin (2014), and it closely followed the procedure described in Stefanska et al., 2017.

In the indirect cases, three typical scenarios emerged: 1) victim was killed in order to eliminate the witness; 2) victim was killed trying to escape a sexual assault; 3) there was no sexual violence but killing occurred in a sexual context (i.e., following consensual sex). Overall, 148 cases were assigned as belonging to this group. In the direct cases, two typical scenarios emerged: 1) the act of killing was itself sexually gratifying or 2) the purpose of

killing was to enable sexual acts to be carried out with the victim’s body. Overall, 143 cases in total were assigned as belonging to this group.

Analytical strategy

Data analysis was performed in three stages. First, the analysis explored whether direct and indirect sexual killers differed in their ability to delay detection. Delaying detection was measured by the time (in days) it took from the murder to arrest although time from the murder to recovery of the body and the time from recovery of the body to the arrest was additionally examined. Mann Whitney U test was used as the distribution of these variables was highly skewed (with a large proportion of the cases being solved during the first few weeks) violating the normality assumption of the data (Pallant, 2007).

Second, Chi-square tests examined whether direct and indirect offenders differed in the precautions they used. Third, negative binomial regressions examined the impact of forensic strategies used by the perpetrators on a number of days until arrest. Negative binomial regression is a technique designed modelling when the dependent variable is an observed count. While it is a generalization of Poisson regression, it loosens the restrictive assumption that the variance is equal to the mean made by the Poisson model (Beaujean & Morgan, 2016). In order to ensure that the dispersion parameter was accurate, the estimate value rather than the assumed dispersion parameter was used. In other words, the dispersion parameter was calculated for each of the regression model. Using the same set of variables, a series of negative binomial regressions were employed to separately look at the direct, the indirect and the whole sample of sexual killings (with the results from the whole sample provided for comparison).

Results

Descriptive statistics showed that the time from the killing to the arrest (measured in days) was longer for the direct (mean = 163.2, median = 7.5, $n = 143$) than the indirect sexual killers (mean = 129.3, median = 4.4, $n = 147$). Mann-Whitney U value was found to be statistically significant $U = 8116$ ($z = -3.44$, $r = .2$), $p < .01$.

Perhaps not surprisingly, a body was recovered quicker in the indirect than in the direct killings (mean = 128.8, median = .5, $n = 148$ vs mean = 162.9, median = 1, $n = 143$ respectively), $U = 8041$ ($z = -3.49$, $p < .001$, $r = .2$) and a perpetrator of the indirect rather than the direct killing was arrested faster after the body was recovered (mean = 133.8, median = 3, $n = 148$ vs mean = 158.7, median = 4, $n = 143$ respectively), $U = 8772.5$ ($z = -2.53$, $r = 1.4$), $p < .05$.

When examining specific forensic awareness strategies used by indirect and direct sexual killers, results show that only two methods used by the perpetrators significantly differed between indirect and direct cases (*See Table 1*). Specifically, sexual killers classed as direct were significantly more likely to act upon their victims, i.e. tie their victims, gag or cover their eyes or administer drugs ($\chi^2 = 4.5$, $p = .03$). On the other hand, sexual killers classed as indirect were significantly more likely to prepare an alibi ($\chi^2 = 4.3$, $p = .04$).

TABLE 1 ABOUT HERE

Table 2 presents the findings of the negative binomial regression analyses with respect to the number of days it took from killing until arrest of the perpetrator for the direct, the indirect cases as well as the whole sample (which was provided for comparison). All of the regression models were found to be significant at $p < .0001$. In the indirect sample, two cases were found to have an undue influence on the results (using Cooks Distance). However, given that the exclusion of the influential observations did not alter the results, the cases were retained. Findings indicate that except for acting upon environment and preparing an alibi (which had no effect), all of the predictors increased the incident rate ratio of delaying detection for the sexual killers examined as a whole sample. The differences however can be noted between the direct and the indirect groups.

In the direct group, the time of delaying detection was likely to be longer if the perpetrators acted upon their victim (IRR = 4.01, $p < .001$), protected their identity (IRR = 2.98 times, $p < .01$), prepared an alibi (IRR = 2.82 times, $p < .05$), gave false statements (IRR = 2.16 times, $p < .01$), and disposed of the victim's body (IRR = 2.09 times, $p < .01$). On the other hand, the risk of detection was higher when they acted on the environment (IRR = .32, $p < .01$) or set fire to the scene (IRR = .25, $p < .01$). Removing evidence had no effect. In the indirect group, protecting identity (IRR = 12.94, $p < .001$), giving false statements (IRR = 2.91, $p < .001$), acting upon the environment (IRR = 2.60, $p < .01$) and removing evidence from the crime scene (IRR = 2.10, $p < .01$) increased the time of delaying detection. Acting upon victim, setting fire to the crime scene, disposing of the victim's body and preparing an alibi had no effect in this group.

TABLE 2 ABOUT HERE

Discussion

The study examined the time it took from the killing to the arrest of the offender (excluding the cases where the perpetrator turned himself in immediately after the murder). The analysis revealed that it took longer for the direct than the indirect sexual killers to be arrested after the murder. Both the time it took to recover the body and the time it took to arrest the perpetrator after the body was recovered was faster in the indirect compared to the direct homicides. However, despite the fact that the direct perpetrators were better at delaying detection, overall the indirect and the direct perpetrators did not differ in the use of many of the precautions. In fact, out of eight forensic awareness strategies noted in the current study, only two differed in the frequency they were used between the groups; direct perpetrators more frequently acted on the victim whereas indirect perpetrators more frequently prepared an alibi.

When considering the use of specific forensic precautions on the ability to delay apprehension for the two types of sexual killers, the results show that the direct perpetrators were likely to delay their apprehension if they acted upon their victim, protected their identity, prepared an alibi, gave false statements and disposed of the victim's body. The risk of quicker detection was higher when they acted on the environment or set fire to the scene while removing evidence had no effect. On the other hand, the indirect perpetrators were likely to delay their apprehension if they protected their identity, gave false statement, acting upon the environment and removing evidence from the crime scene. Acting upon victim, setting fire to the crime scene, disposing of the victim's body and preparing an alibi had no effect in this group.

The results are better understood in the context of analysis of the crime scripts for each offender type. For the direct sexual killers, deviant sexual fantasies are a strong

motivational force behind the killing and these, often sadistic, fantasies appear to influence the behaviour of the perpetrator during the criminal event (Stefanska et al., 2017; Stefanska & Higgs, 2018). Importantly, when taking into account the hybrid between sexual assault and homicide, for these offenders the killing is integral as at some point it provided a source for sexual stimulation. This strongly suggests that the act of killing was integrated in the stage of preparation for the crime or at least a prominent feature of the fantasy world (Arrigo & Purcell, 2001; Hickey, 2001; Ressler et al., 1988). Therefore, through rehearsal it is possible that direct perpetrators simply became more skilled at using various behaviours with the aim of avoiding detection, more specifically disposing of the victim's body, protecting own identity, preparing an alibi and/or giving false statements. Acting upon victim (i.e. tying, gagging or blindfolding the victim or administering drugs) was the only strategy that not only delayed apprehension but also it was used more frequently by the direct aggressors. This suggests that these perpetrators are either again more skilled at using it or it is a more successful precaution although in the latter case the results would be somewhat inconsistent with the results obtained by Beauregard and Martineau (2014) who found that acting upon victim increased the chances of the case being solved.

Acting upon environment by for example disabling lights or telephones or security systems, obscuring access of the doors or windows appeared to be an ineffective forensic strategy that increased the risk of quicker detection in the direct group. The explanation for this could be linked to the possibility that the direct perpetrators spend more time with their victims as they enact their deviant sexual fantasies either pre-mortem through confinement and torture or post-mortem. Acts of unusual and ritualistic crime scene behaviours such as piquerism or body arrangement as well as body mutilation are frequent (Stefanska et al., 2017) and if the perpetrator acted on the environment it is possible that potential witnesses had noticed something whilst the perpetrator was still at the crime scene or shortly after when

the evidence had not been compromised. In other words, acting upon environment might draw attention to otherwise a well prepared crime and a similar effect can be found in the use of arson as a strategy to dispose of evidence. It is for the same reason that although removing evidence and cleaning the crime scene delays apprehension in the indirect perpetrators, it has no effect in the direct group. We can assume that overall it is an effective precaution (if not to avoid crime then at least to slow down police work) but in the direct perpetrators the risk of leaving physical evidence linking them to the killing is simply greater.

For the indirect sexual killers, the crime scripts picture is somewhat different. Two main scenarios emerge in which the sexual assault is either premeditated or the sexual assault is not planned and in fact, the victim and the perpetrator meet in a consensual situation e.g. a bar or someone else's home. The killing however is usually not planned and occurs due to situational factors e.g. the victim resisted further sexual advances or threatened to report the perpetrator for the sexual assault (Stefanska, Carter, Higgs, Bishopp, & Beech, 2015). Therefore, protecting own identity from a start and acting upon environment, so that the victim cannot alert anyone, is effective. Interestingly, while giving false statements successfully delays arrest using an alibi does not, even though this strategy is effective in the direct group and the indirect aggressors use it more frequently. The explanation probably stems from situational components in the criminal event of the indirect aggressors. Giving false statements for example "I was with her but I left at such and such an hour" sufficiently delays arrest however, giving false alibi has a potential to be incriminating as it often relies on other people's statements. Although having an alibi per se was not examined, Beauregard and Martineau (2014) found that using other precautions (including an alibi) increased the likelihood of the offender apprehension.

Implications

Understanding the relationship between the sexual aspect and the act of killing within the criminal event of a sexual homicide is crucial. This is because sexual homicide consists of, or Beauregard and Martineau (2017) suggest is a hybrid of, two components: the sexual assault and the killing. The newly proposed direct/indirect classification takes into account this relationship and distinguishes between the sexual murderers based on the proximity of the sexual act to the killing and whether the killing was or was not a source of sexual stimulation for the offender. Importantly, despite the fact that the research has been consistently indicating that the sexual murderers are diverse, when examining various crime scene behaviours the offenders are often amalgamated into one group whereby losing the explanatory power to account for various scenarios. We hope that this research will bring practitioners working in the field a step closer to understanding how the crime scene behavioural indicators can be useful when formulating offenders' risk factors.

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Table 1 *Distribution of subjects in the direct and indirect profile of forensic awareness strategies*

	Direct cases (n= 143) %	Indirect cases (n= 148) %	χ^2	Sig.
<i>Precautions used by the offender</i>				
Protecting his identity	11.9	9.5	.45	ns
Acting upon victim*	28.0	17.6	4.5	.03
Acting upon environment	17.5	14.9	.37	ns
Removing evidence	40.6	39.2	.05	ns
Setting fire to the crime scene	9.1	12.8	1.0	ns
Disposing of victim's body	35.7	37.2	.37	ns
Giving false statements	30.8	26.4	.4	ns
Preparing alibi*	7.7	15.5	4.3	.04

* p < .05, **p < .01, ***p < .001

Table 2 *Negative binomial regression analyses for the number of days from killing until arrest*

Predictor	All SK (N = 291) Exp β (S.E)	Direct SK (n= 143) Exp β (S.E)	Indirect SK (n= 148) Exp β (S.E)
Protecting his identity	3.32 (.15)***	2.98 (.42)**	12.94 (.54)***
Acting upon victim	3.48 (.21)***	4.01 (.27)***	.69 (.35)
Acting upon environment	.91 (.24)	.32 (.38)**	2.60 (.34)**
Removing evidence	1.79 (.20)**	.91 (.26)	2.10 (.27)**
Setting fire to the crime scene	.40 (.30)**	.25 (.43)**	1.13 (.41)
Disposing of victim's body	1.77 (.32)**	2.09 (.26)**	1.54 (.25)
Giving false statements	2.24 (.21)***	2.16 (.29)**	2.91 (.27)***
Preparing alibi	1.11 (.31)	2.82 (.52)*	1.30 (.34)
Constant	8.83 (.15)***	12.99 (.21)***	4.43 (1.8)***

* $p < .05$, ** $p < .01$, *** $p < .001$